

# Transportable Range Operations Center (TROC)

The mobile range capability of the TROC enables the NAVAIR Range Department to provide remote range operations in support of testing and training at locations across the country for use by Unmanned Aerial Systems (UAS) and other RDT&E and training customers.

The Transportable Range Operations Center, or TROC offers a fully-integrated, mobile platform to provide the functionality (i.e., mission command and control, safety oversight and surveillance, and data acquisition) of a typical fixed-site, open-air range operations center. The TROC operations and range control center houses range instrumentation systems and equipment that enable it to operate autonomously or while connected to the Atlantic Test Ranges (ATR) through the Advanced Range Operations Network (ARON) or other RDT&E networks.

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## mobile range control

Housed in a 53-foot trailer, the TROC can operate from networked remote instrumentation sites within the ATR/ Patuxent River Complex, or be taken to remote sites and operated in a stand-alone mode. Depending on the location and operational requirements, the TROC can import data from the ATR fixed-instrumentation infrastructure or function with transportable range instrumentation and operated in a remote, autonomous configuration. The system was developed to improve range support to the tactical UAS operations conducted at the Webster Field Annex; however this capability can be used to support a wide variety of customer requirements that need this type of flexibility.

TROC interior



## for more information

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## mission-specific applications

The TROC's combination of instrumentation and mission-specific processing and display systems allows for real-time mission command and control, safety and surveillance and data acquisition during a wide variety of operations in support of test and training events:

- Situational awareness/range safety:
  - Range surveillance (SureTrak)
  - Flight termination
  - Radio frequency (RF) monitoring and de-confliction
- Command and control
  - Range Computation & Control System (RCCS III)
- Post-mission debrief and After Action Reporting (AAR)
  - Personal Computer Debriefing System (PCDS)
- Time Space Position Information (TSPI) data acquisition
  - Command and control
  - Remote instrumentation slaving
- Real-time Telemetry Processing System (RTPS)
- Photogrammetrics (documentation and video scoring)
- Electronic warfare
  - Simulation and stimulation
  - Infrared signature measurements

## TROC Features

- Segregated equipment area with 19-inch equipment racks
- 10 fully integrated workstations each with
  - Rack-mounted PC
  - Flat panel display and keyboard
  - Operator selectable mission-specific software applications
- 2 large, wall-mounted, flat panel displays
- Video switch
- Communications equipment
  - LAN, radio, voice
- Electrical power distribution system
- Internal cable raceways for systems integration
- 42-foot telescoping mast
- HVAC systems
- Secure storage container
- Reinforced roof for installing roof-top systems (as required)

## range instrumentation & mission systems options

Transportable range instrumentation that is available for use with the TROC includes

- Tracking instrumentation
  - Radar (surveillance)
  - GPS (Global Positioning System)
  - Electro-optical tracking systems
  - Laser
- Flight Termination System (FTS)
- RF environmental monitor (frequency de-confliction)
- Electronic warfare threat emitter systems
- Signature measurement systems
- Patuxent River Infrared Signature Measurements (PRISM)
- Real-time telemetry processing systems
- UAS ground control/Tactical Control System (TCS)

